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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/707,312

12/04/2003

Mark S. Cavin

Cogno99US

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EXAMINER

DAO, MINH D

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

04/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/707,312	Applicant(s) CAVIN, MARK S.	
	Examiner MINH D. DAO	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 8-12 is/are allowed.
- 6) ☒ Claim(s) 13, 15-18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 14, 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments 08/02/07 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13,15-18, 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pau (US 6,735,426) in view of Staszewski et al. (US 2004/0151257) and further in view of Kielmeyer et al. (US 5,669,068).

Regarding claim 13, Pau teaches a radio communication device comprising: a first radio integrated circuit (IC) that performs one of radio transmission (see fig. 1; col. 3, lines 39 to col. 4, line 32); a second radio IC that performs one of radio reception (see fig. 1; col. 3, lines 39 to col. 4, line 32). However, Pau does not disclose that the first radio IC generates and uses a local oscillator signal for radio transmission and/or radio reception operation, and wherein the local oscillator signal is coupled to the second radio IC for use in its radio transmission and/or radio reception operation. Staszewski, in an analogous art, teaches transceiver system including two separate circuits one circuit for

a transmitter and the other circuit is for a receiver. The transmitter circuit comprises a local oscillator that is used for its function, and the local oscillator is also coupled to the receiver for use in its reception operation (see fig. 2; sections [0036,0037]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the two transmit and receive circuits of Staszewski into the two separated lcs of Pau in order to pre-distort signals before coming into the receiver as taught by Staszewski (see section [0005]).

Still regarding claim 13, Pau and Staszewski do not mention a bi-directional port circuit configured to couple to the local oscillator signal source that couples the local oscillator signal to an external pin for connection to another radio device. Cited reference Kielmeyer teaches a bi-directional amplifier port circuit coupled to the local oscillator signal source that couples the local oscillator signal to an external pin for connection to radio transceiver device (see fig. 1; col. 2, line 25 to col. 3, line 10). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Kielmeyer to Pau and Staszewski in order for the combined system to avoid insertion loss and noise figure degradation in transmit and receive mode respectively as taught by Kielmeyer (see abstract).

Regarding claim 15, the combination of Pau, Staszewski and Kielmeyer teaches that at least one frequency divider circuit that produces an intermediate frequency oscillator signal from the local oscillator signal (see Pau, fig. 6, items 1802, 1812, 1814).

Regarding claim 16, the combination of Pau, Staszewski and Kielmeyer teaches a phase lock loop system and wherein the at least one frequency divider circuit is connected inside the phase lock loop system (see Pau, paragraphs [0023, 0042]).

Regarding claim 17, the combination of Pau, Staszewski and Kielmeyer teaches the local oscillator source provides a radio frequency local oscillator signal (see fig. 1 of Kielmeyer).

Regarding claim 18, the combination of Pau, Staszewski and Kielmeyer teaches that the first and second frequency divider circuits and a second port circuit connected to a node between the first and second frequency divider circuit that couples a signal that is twice the frequency of the intermediate frequency local oscillator signal to an external pin for connection to another integrated circuit radio device (see Kielmeyer, fig. 1; col. 2, line 25 to col. 3, line 10).

Regarding claim 20, the combination of Pau, Staszewski and Kielmeyer teaches the radio device of claim 15, and further comprising a phase lock loop system and wherein

Art Unit: 2618

the at least one frequency divider circuit is connected outside the phase lock loop system (see Pau, fig. 6).

Regarding claim 21, the combination of Pau, Staszewski and Kielmeyer teaches that the radio device of claim 20, and further comprising a second port circuit coupled to the at least one frequency divider circuit that couples a divider reset signal to an external pin for connection another integrated circuit radio device (see Kielmeyer .fig. 1; col. 2, line 25 to col. 3, line 10).

Regarding claim 22, the combination of Pau, Staszewski and Kielmeyer teaches the radio device of claim 13, wherein the radio transmitter and/or radio receiver, local oscillator signal source and port circuit are implemented on a single integrated circuit (see Pau, fig. 1).

Regarding claims 23, 24 the claims include the limitations as that of claim 13, and therefore is interpreted and rejected for the same reason set forth in the rejection of claim 13.

Allowable Subject Matter

1. Claims 1-6, 8-12, 25 and 26 are allowed. These claims are allowed for the reason stated in Applicant's remarks filed 02/12/08.

Art Unit: 2618

2. Claims 14, 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 14, the combination of Pau, Staszewski and Kielmeyer, as mentioned above, teaches the limitations of claim 13 but fails to disclose that the bi-directional port circuit comprises a first amplifier having an input that is connected to the local oscillator signal source and an output connected to the external pin, the first amplifier amplifies the local oscillator signal when it is to be coupled to another radio device, and a second amplifier having an input connected to the external pin and an output connected to the radio transmitter and radio receiver, the second amplifier amplifies the externally generated local oscillator signal when it is to be used, wherein the first amplifier is disabled when the second amplifier is enabled and the second amplifier is disabled when the first amplifier is enabled as specified in the claim.

Regarding claim 19, the combination of Pau, Staszewski and Kielmeyer, as mentioned above, teaches the limitations of claim 18 but fails to disclose that 19. (original) The radio device of claim 18, wherein the phase lock loop system comprises a phase detector, a voltage controlled oscillator and a multi-modulus divider, and wherein the multi-modulus divider has an input that is coupled to receive an intermediate frequency oscillator signal at an output of the second frequency divider circuit and an output that is coupled to an input of the phase detector, an output of the phase detector being coupled to the voltage controlled oscillator, and an output of the

voltage controlled oscillator being coupled to an input of the first frequency divider circuit as specified in the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH D. DAO whose telephone number is (571)272-7851. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW ANDERSON can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2618

Application/Control Number: 10/707,312
Art Unit: 2618

Page 8